Listing enclosed herewith immediately after the Abstract.

At the top of page 61, please delete "CLAIMS" and substitute --What is claimed is--

IN THE CLAIMS:

Please cancel claims 1-23 without prejudice and without disclaimer of the subject matter contained therein.

Please add the following claims:

--24. A method for assessing the agronomical fitness of a plant or plant material comprising the steps of:

a) subjecting an explant of said plant or plant material to a stress condition;

b) measuring the electron flow in the mitochondrial electron transport chain to assess agronomical fitness in cells of said explant of said plant or said plant material;

c) comparing said measurement to that of explants of control plants or control plant material, under similar conditions as for said explants of said plant or plant material, wherein the greater the amount of electron flow the fitter said plant or plant material.--

--25. The method of Claim 24, wherein said electron flow in the mitochondrial electron transport chain is determined by measuring the capacity of said explant subjected to said stress condition to reduce 2,3,5-triphenyltetrazolium chloride.--

--26. The method of Claim 24, wherein the electron flow in the mitochondrial electron transport chain is determined by measuring the capacity of said explant subjected to said stress condition to reduce 3-(4,5-dimethylthiazol-2-yl)-2,3 diphenyl-2H-tetrazolium.--

--27. The method of Claim 24, wherein said stress condition is selected from salt stress, osmotic stress, stress by incubation in the presence of an inhibitor of poly-ADP-ribose polymerase, stress from extreme temperatures, stress by treatment with sublethal doses of chemicals, stress by treatment with sublethal doses of herbicides, stress by treatment with sublethal doses of heavy metals and stress by irradiation with ultraviolet light.--

--28. The method of Claim 24, wherein said stress condition is salt stress.--

--29. The method of Claim 28, wherein said salt stress is induced by incubation in K-phosphate buffer comprising between 10mM and 80 mM K-phosphate.--

--30. The method of Claim 24, wherein said stress condition is osmotic stress.--

--31. The method of Claim 30, wherein said osmotic stress is induced by incubation in a buffer comprising about 2% sucrose.--

--32. The method of Claim 24, wherein said stress condition is incubation in the presence of an inhibitor of poly-ADP-ribose polymerase.--

--33. The method of Claim 32, wherein said inhibitor of poly-ADP-ribose polymerase is selected from niacinamide, picolinamide, 5-methyl nicotinamide, methylxanthine, thymidine, benzamide, 3-methoxybenzamide, 3-aminobenzamide, 2-aminobenzamide, pyrazinamide, theobromie and theophylline.--

--34. The method of Claim 32, wherein said inhibitor is present in a concentration of from about 100 mg/L to about 1,000 mg/L.--